
Appendix C
E-Force
Army of Excellence
Combat Engineers
November 1985*

* Appendix C has been recreated. However, it retains the spelling, punctuation, and style of the original.

E-FORCE ARMY OF EXCELLENCE



COMBAT ENGINEERS

COMBAT ENGINEERS ... AT A WATERSHED

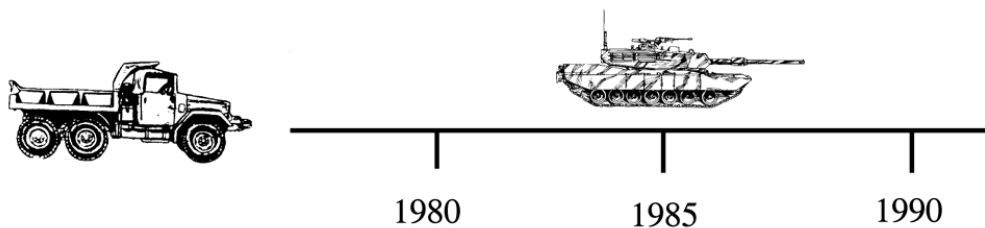
- Combat multiplier—adds strength, depth & flexibility
- Valued when needed ... but often viewed as cumbersome and deliberate
- Heavy resource reliance ... manpower, materiel & time
- Engineer improvements have previously been at a stutter step

THIS IS A TIME WHEN...

- The Army has fielded a new generation of combat vehicles
- New Doctrine—airland battle—places a premium on mobility and flexibility
- The Army is in major renovation—to the Army of excellence
 - New fighting structure
 - Trend to light forces
 - Resource constrained
- National training center experience highlights the importance of M-CM-S and the value of the engineer role to the combined arms team
 - The integration of maneuver, fire support, and terrain is imperative!

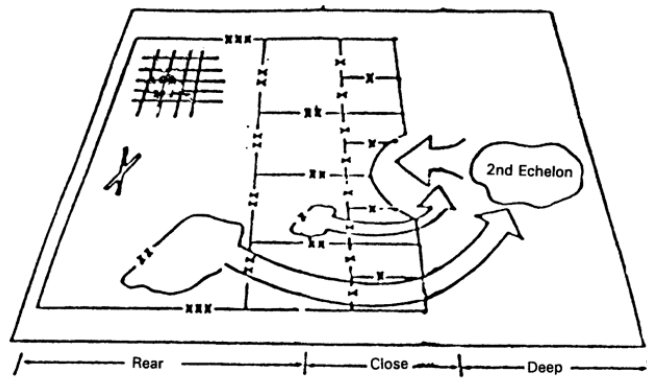
THE PROBLEM SIMPLY STATED:

We are supporting a rapidly modernizing battlefield combined arms team with a 1960's engineer force!



Today's combat engineers are the "weakest link" in the battlefield combined arms team!

AIRLAND BATTLE DOCTRINE



TENETS

- INITIATIVE
- AGILITY
- DEPTH
- SYNCHRONIZATION
- ENDURANCE

- RETAIN FREEDOM OF ACTION
- ENSURE CONTINUITY OF OPERATIONS
- PROVIDE SUSTAINMENT
- POSITION RESERVES

- SHAPE THE FLOT
- DESTROY THE THREAT
- PASS RESERVES
- DISRUPT COHERENCE

- FRUSTRATE TEMPO
- ISOLATE CLOSE BATTLE
- CAUSE REACTION
- INFLUENCE FUTURE BATTLES
- MANEUVER TO OBJECTIVES

ENGINEERS ON THE AIRLAND BATTLEFIELD

- Mobility
 - Increased emphasis on tactical mobility
 - Faster tempo
 - Greater distances
- Countermobility
 - Need to shape battlefield
 - Rapid shifts in defensive/offensive operations
- Survivability
 - Increased lethality
 - Broadened dimensions
 - Faster tempo
- General Engineering
 - Greater emphasis on lines of communication
 - Shorter warning time

Dimensioning the challenge—Engineers must be more responsive, accomplishing the tasks over a larger area in significantly less time!

THINKPIECE—ENGINEERS IN THE COMBINED ARMS TEAM

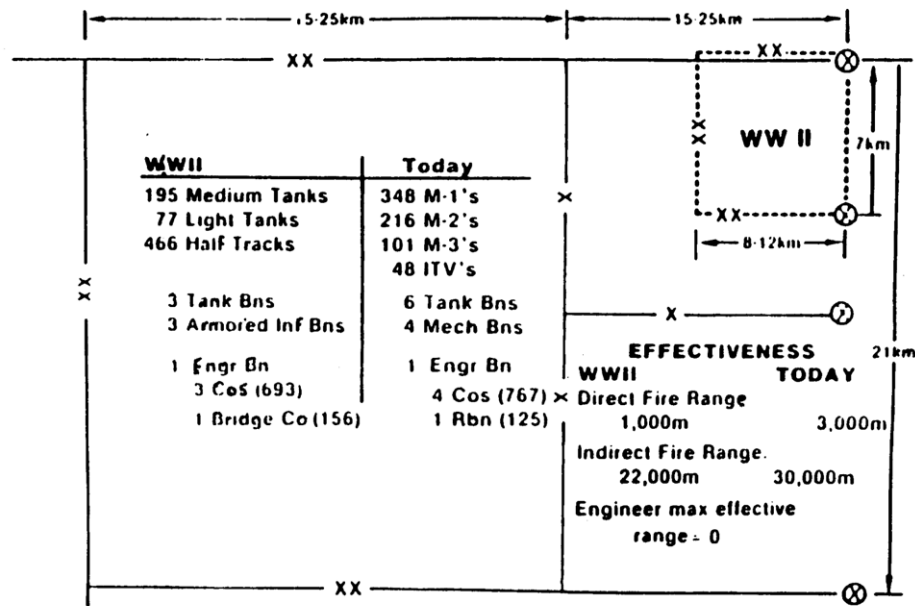
- In many battlefield situations combat engineers could be the combined arms task force's greatest combat multiplier.
- By measure of the NTC and our major exercise experience we are only obtaining a small fraction of engineer potential.
- The Task Force Engineer has been given an impossible mission...In no other 2LT do we entrust to such an extent the success or failure of the whole TF mission.
- An engineer unit arriving on the scene to do a job cannot be an instant member of a cohesive, well-drilled team. They don't know SOP's. The synergism that is necessary for the combined arms team is not there.
- We have sufficient engineers in the force—but C² and mobility become a tangled mess as we overlay Corps Bns on the Divisional structure. We need agility—but can't get it with this archaic architecture.
- The Maneuver Brigade needs an engineer battalion (one company per task force) to support it in almost all operations.

COL Conrad
Former Bde Cdr, 4th Mech Div
C/Army Studies Gp
31 Oct 85

THE COMBAT ENGINEER PART OF THE CCH COMBINED ARMS TEAM IS BROKEN!

**SEVERE BATTLEFIELD PROBLEMS
LIMIT ENGINEER CAPABILITIES
AND
COMBINED ARMS EFFECTIVENESS**

THE CHANGING BATTLEFIELD



Combat Support: Unlike artillery and aviation which can project, engineers must be at the point of action.

CURRENT DIVISION ENGINEER PROBLEMS

- Insufficient organic engineer assets for mission
 - Corps Engineer Battalion (DS) required forward
 - Battlefield size, lethality, mobility
- Organization impedes integration with maneuver elements
 - AD HOC solutions not responsive
 - Equipment mix unbalances, complicate solution
 - Inefficient, wastes resources
 - Burdens commander, does not fulfill his needs
- Overloaded Platoon Leader, Engineer Commanders
- Maintenance, communications, Class V barrier supply don't work

Bottom line: Bandaid solutions will not support Airland Battle Doctrine – will not be responsive to maneuver commander's needs

NTC LESSONS LEARNED — THE OVERLOADED PLATOON LEADER

- The Task Force engineer has been given an impossible mission...in no other 2LT do we entrust to such an extent the success or failure of the whole TF mission.

COL Conrad
Bde Cdr, 4th Inf Div (Mech)
31 Oct 85

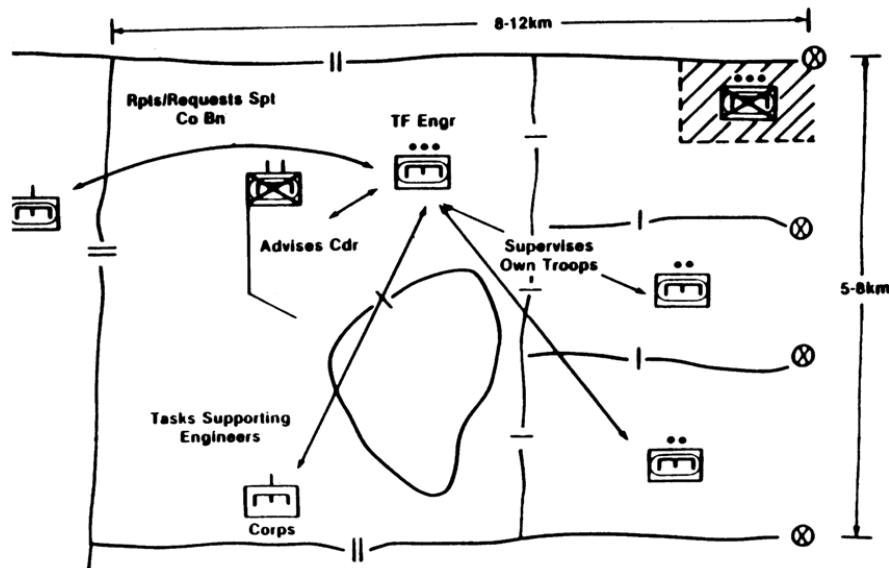
- The engineer platoon leader is unable to simultaneously plan, effectively supervise execution, coordinate logistics support, command and control of personnel, equipment, and materials, and coordinate with other combat elements...the motivated engineer lieutenant is often "overcome by events."

Rotation 86-1
1 Nov 85

- Maneuver units compensate by using the Task Force XO, CSM, or Asst S3 as a "Dozer CINC," to supervise the engineer platoon leader.

CAT: 1 Jan 86
Commander memo: 20 Nov 85

ENGINEER PLATOON LEADER'S RESPONSIBILITIES

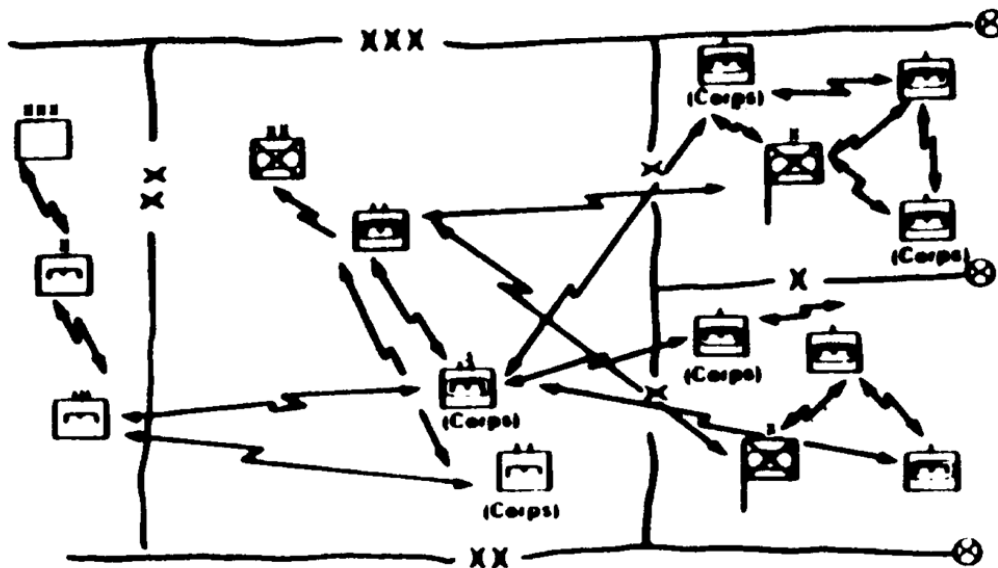


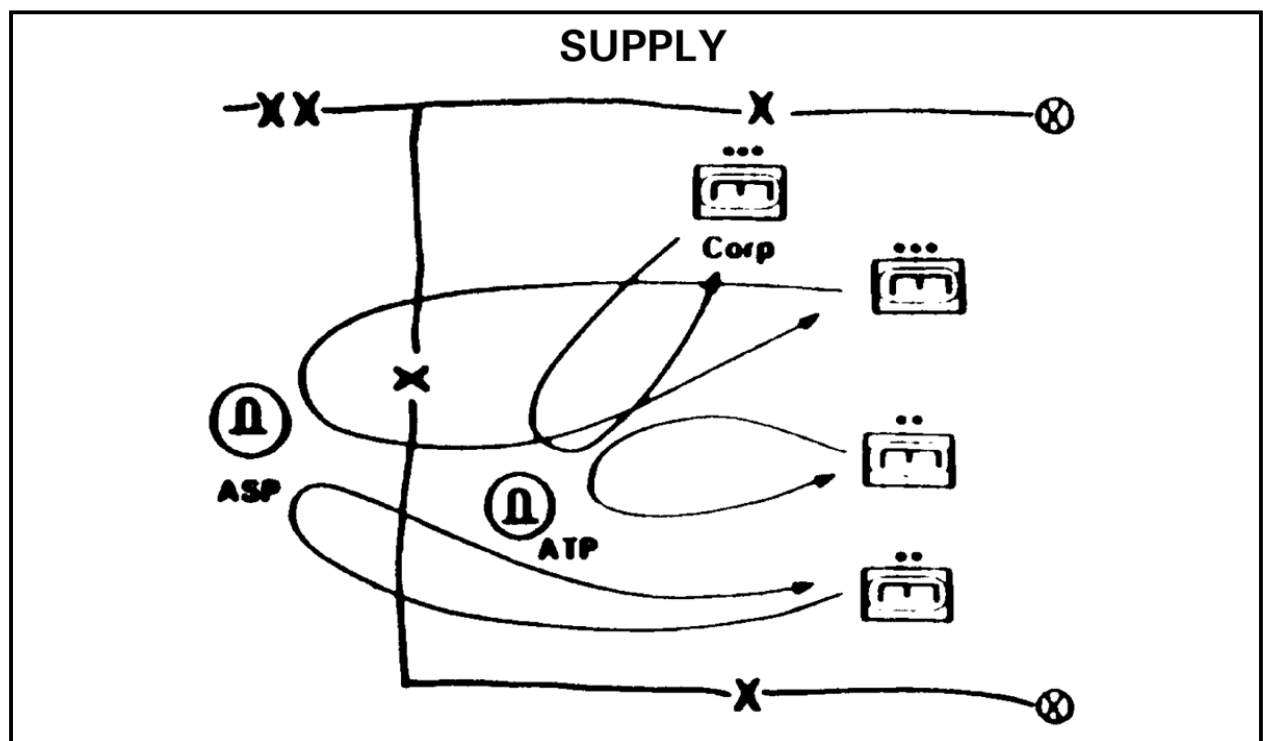
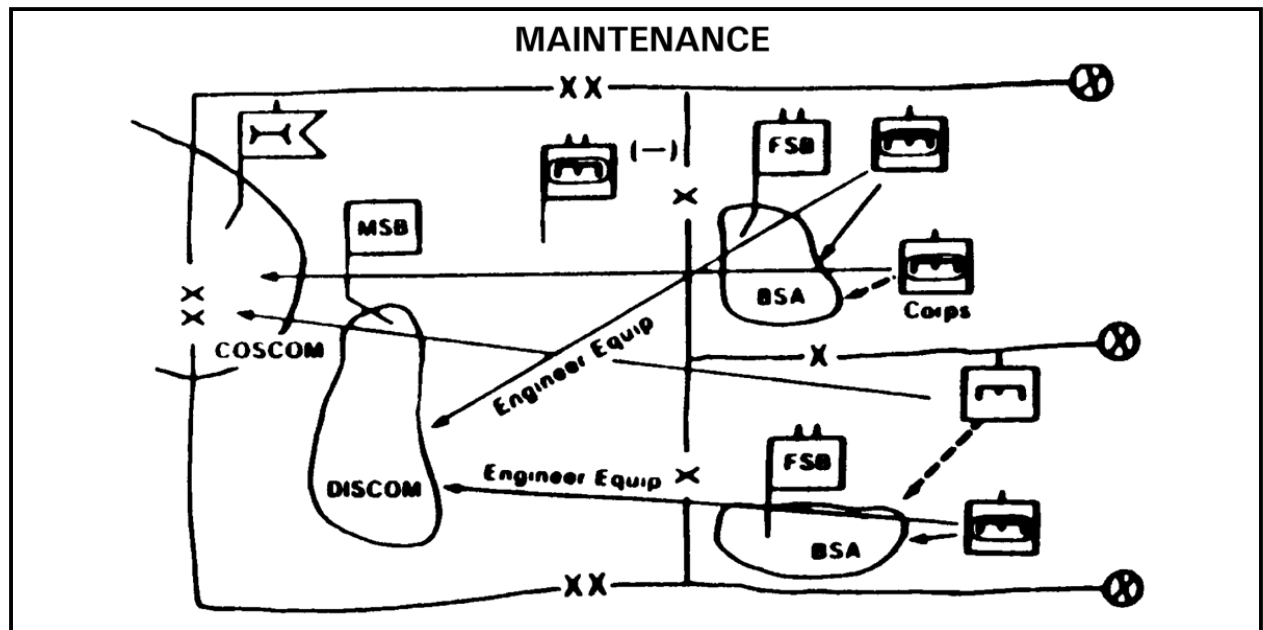
The Task Force Commander's engineer expert advisor,
planner, executor, coordinator

CURRENT ENGINEER C³, MAINTENANCE, SUPPLY BROKEN

C ³ —	<p>Inappropriate level of commanders, dual-hatted</p> <p>Extended Distances</p> <p>Multiple nets required, — frequency interference</p> <p>CEOI, COMSEC keying material difficulties</p>
Maintenance —	<p>Support changes as command relationships change</p> <p>COSCOM support pulled forward — or DISCOM supports without resources</p> <p>Extended distances inhibit support from parent battalion</p>
Supply —	<p>Engineer requirements spread throughout Division</p> <p>System supporting Division/Corps mix changes as command relationships change</p> <p>Structure not parallel to supported maneuver units</p> <p>Class V BARRIER haul always a problem</p>

COMMUNICATIONS





HOW WE FIX IT —

Build capable, responsive combat engineer organizations for the task force commander's requirements
and

Aggregate upward — ensuring integrated, capable, responsive combined arms support at each level

Airland Battle Doctrine

— The requirements basis for E-Force

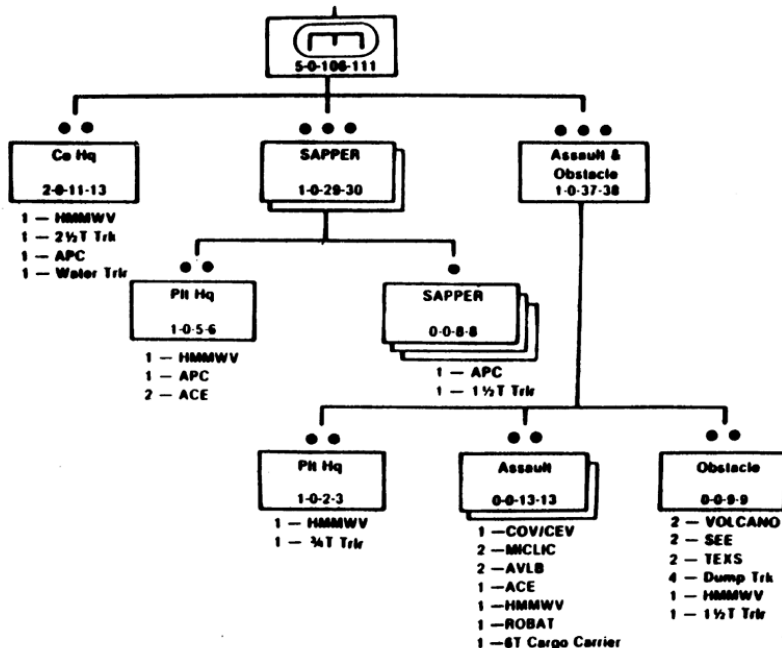
WHAT DOES THE TASK FORCE COMMANDER NEED FROM HIS ENGINEERS?

Phase	Requirement	Engineer Action
Offense	<ul style="list-style-type: none"> • Complex Obstacle Breach • Short Gap Crossing • Flank Protection • Water Gap • Mines 	Breach Obstacle (Now!) AVLB/M9 (Now!) Volcano (Now!) Ribbon Bridge (Soon) Breach Mines (Now!)
Transition (Offense to Defense)	<ul style="list-style-type: none"> • Survivability Positions • Block Major Approaches 	M9Ace (Now!) Mines, Craters (Now!)
Defense	<ul style="list-style-type: none"> • Best Use of Terrain • Obstacles — Tied to Concept • Fighting Positions • Ability to Move • Resupply 	Continuous Terrain Reinforcement (Now!) Key Approaches (Now!) In Depth — Mines Craters, AT Ditches, Destroy Bridges (ASAP) Primary (Now!) Alternate (ASAP) Supplementary (ASAP) Combat Roads & Trails Open LOC
Transition (Defense to Offense)	<ul style="list-style-type: none"> • Ability to Move Rapidly 	Mobility Assets Positioned for Response

WHAT DOES THE TASK FORCE COMMANDER NEED FROM HIS ENGINEERS?

Phase	Requirement	Engineer Action
Continuous — All Phases	<ul style="list-style-type: none"> Understand Commanders intent Capability Positioned for Responsiveness Timely Engineer Advice/Recommendations/Reconnaissance Planning Status Capability for Independent/Integrated Action Sustainable Ability to Rapidly Adjust to Mission Changes 	<p>TF Engr — Proximity to Cdr/Staff</p> <p>Battle Sense/Troop Leading/Organization</p> <p>Knowledgeable Integrated Engineer</p> <p>Strong command and control</p> <p>Systems Work</p> <p>Organization, Planning, Execution</p>
In Sum:	Cohesive, integrated, supportable organizations capable of rapid response to battlefield changes. The engineer structure must be responsive; on-site; integrated with the maneuver force at all times; ready, anticipating, and able to execute the commander's concept and requirements throughout the battle.	

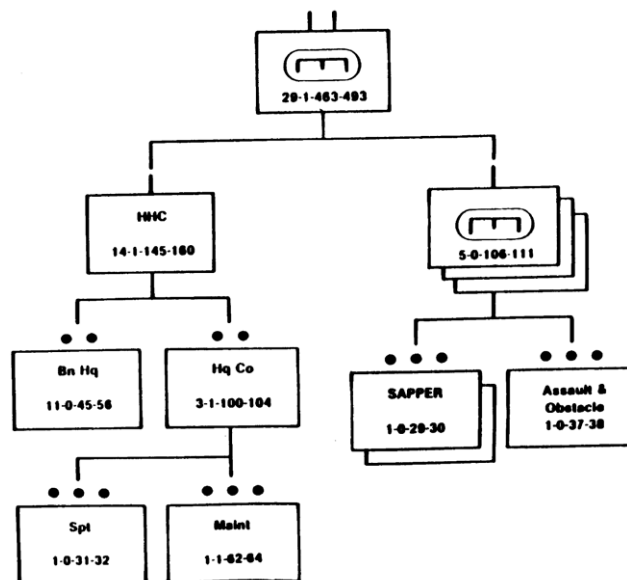
"E"-FORCE—DIV ENGR COMPANY



WHAT THE MANEUVER BRIGADE COMMANDER NEEDS FROM HIS ENGINEERS

- Timely Planning and Execution in context of Commander's intent
- Immediate responsiveness—Timely Engineering Capability where required
- Dedicated Sufficient Engineer Capability—Able to react, move, change promptly
- Integrated Combined Arms—Engineer self-aligning to mission requirements
- Simplified Command, Control and Communications
- Requisite level of Expertise and Commandership
- Absence of Distractors
- Sustainability –Not A Logistics Burden

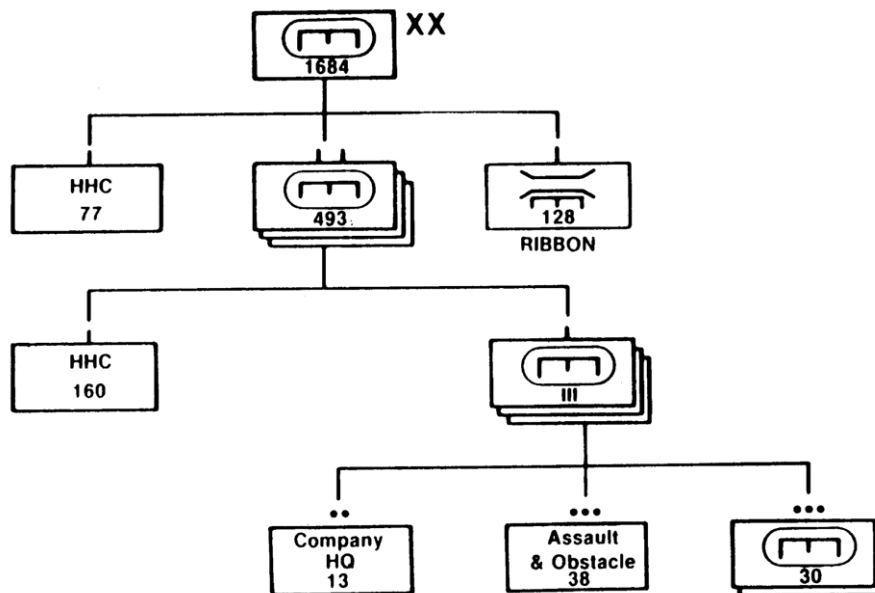
E-FORCE—DIVISIONAL ENGR BN



WHAT THE DIVISION COMMANDER NEEDS FROM HIS ENGINEERS

- Timely planning and execution in context of commander's intent
- Ability to rapidly focus combat power
- Support FLOT battle/free maneuver forces to strike
- Focus forward, not rearward
- Timely engineer capabilities where required
– responsiveness
- Keep LOC's open
- Absence of distractors
- Division survivability
- Command/control of non organic engineers

E-FORCE – DIVISION ENGINEER



THIS PROVIDES:

Division Engineer (Div Eng)
 of
 3 Battalions (C² Moved Forward)
 of
 3 Companies (Close Support Forward, Protected)
 of
 3 Platoons
 Forward
 Equipment Responsive
 Tailor to M, or CM/S

Today's

2 Bns (1 Div, 1 Corps)
 of 8 Co's
 1748 Soldiers

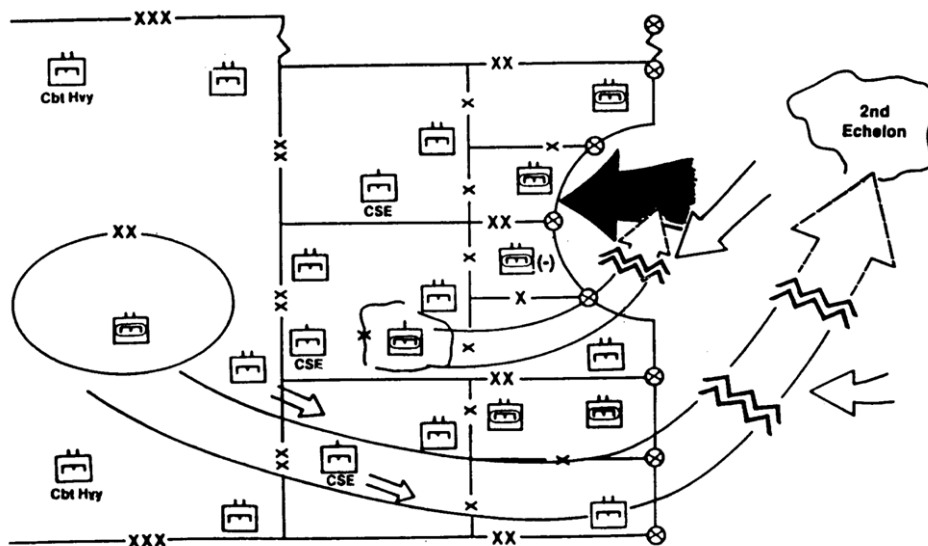
Becomes a

3 Bn Div Eng Command
 of 9 Co's
 1684 Soldiers

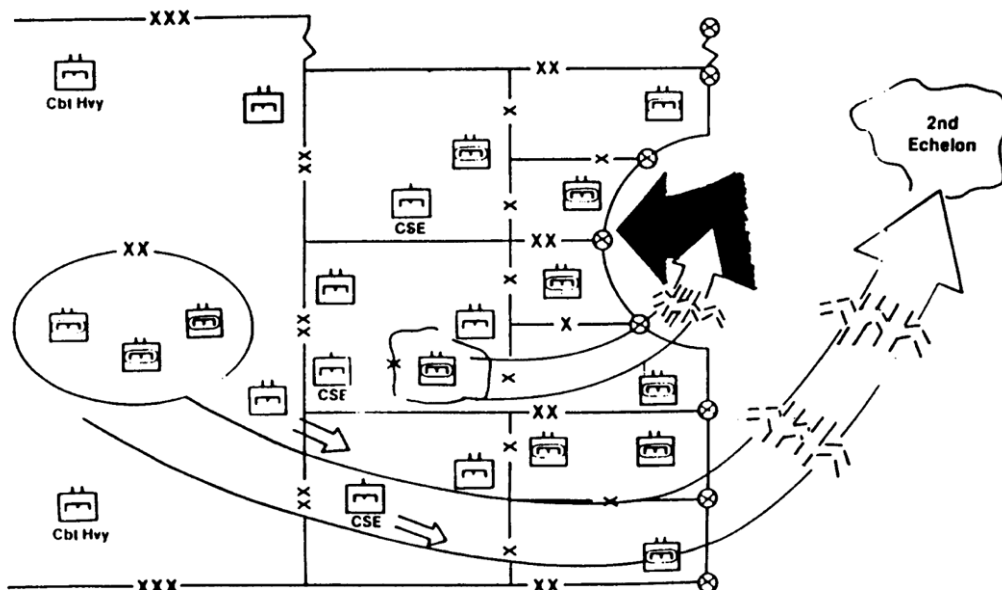
WHAT THE CORPS COMMANDER NEEDS FROM HIS ENGINEERS

- Timely planning and execution in context of commander's intent
- Expedite movement of operational level attacking divisions
- Flexible capabilities to weigh the battle or provide economy of force
- Priority of support to divisions
- Keep LOC's open
- Support corps units (ARTY, COSCOM, Aviation, etc.)
- Support rear operations

ENGINEER BATTLEFIELD LAYOUT – CURRENT



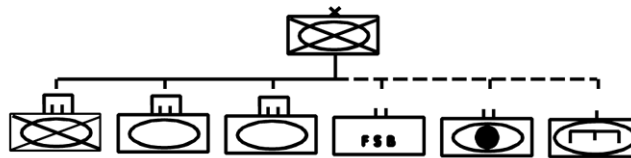
ENGINEER BATTLEFIELD LAYOUT – E-FORCE



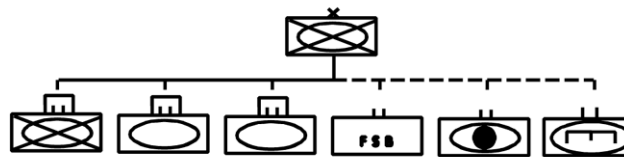
E-FORCE FIXES

- Responsive, capable organization for maneuver Commanders needs in Airland Battle at all echelons.
- Integrates engineer capability with maneuver forward where needed—more effective Combined Arms Team.
- Productive organizations
 - Compact units, reduced admin overhead
 - Increased equipment to labor ratio
 - Increased leader to lead ratio
 - Apply materiel/modernization efficiencies
- Shift C² forward—appropriate level to supported maneuver commander
- Solves battlefield problems—real today and aggravated in Airland Battle
 - Overloaded platoon leader
 - Communications
 - Maintenance
 - Supply (Class V—mines, breaching charges)

CURRENT C²



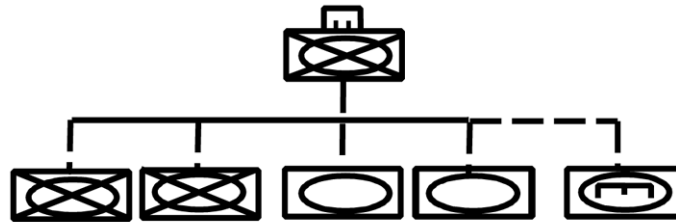
E-FORCE C²



Comparable Command/Staff—Both Planning and Execution

**TODAY'S OVERLOADED PLATOON LEADER
"E"-FORCE REMEDY
TASK FORCE ENGINEER = COMPANY COMMANDER**

- More Experienced Leaders
- More Credibility
- More Assets



**COMMAND, CONTROL &
COMMUNICATIONS**

Current Deficiencies:

- Extended distances
- Multiple nets required to establish C² of engineer task force
- Frequency interference between Corps Engr Bn's and divisional units
- CEOI, COMSEC keying material distribution difficulty
- Ad hoc solutions

E-Force Fixes:

- Shortened lines of communication
- C² streamlined
- Frequency assignment, COMSEC material distribution more manageable
- Reduces requirements/increases flexibility
- Better coordination

Bottom line: Solves C³ problems which are not fixable by doctrinal changes

MAINTENANCE	
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100	100.1

Current Deficiencies:

- Support relationships change as command relationship changes
- COSCOM's support pulled into forward area or DISCOM overloaded
- Extended distances inhibit organizational support from battalion

E-Force Fixes:

- Consistent support relationships
- DISCOM structured to provide required support
- COSCOM units not in bde area
- Smaller area permits maintenance at battalion

Bottom line: Enhanced maintenance for battalion—improved capability for maneuver bde

LOGISTICS SUPPORT SYSTEMS

Current Deficiencies:

- Engineer bn requirements spread throughout division area
- System supporting divisional/corps engineer mix changes as command relationships change
- Structure not responsive—not parallel to supported maneuver units
- DISCOM required to provide support without resources

E-Force Fixes:

- Engineer bn area of responsibility reduced to bde area
- Support channels streamlined—parallels maneuver units
- Solves forward obstacle Class V distribution problem
- DISCOM structured to support engineer structure

In Conclusion, "E"-Force Provides:

RESPONSIVENESS TO THE MANEUVER COMMANDER

- 3-battalion division engineer structure for optimal positioning
- "Tools of the Trade" in line with maneuver requirements
- Streamlined command, control, communications within division

In Conclusion, "E"-Force Provides:

INTEGRATION INTO THE COMBINED ARMS TEAM

- Maneuver commander access to experienced engineer advice at all levels
- Ability to train as we will fight
- Integrated combined arms at all levels
- Engineer capability commensurate with requirements of maneuver partners

WHY BUY THE E-FORCE DIVISIONAL ENGINEER ORGANIZATION?

- Essential to win in airland battle
- Fixes battlefield problems
- Inexpensive—essentially within resources

Bottom Line: Current structure broke

— Doctrine can't fix